

THE EUGENICS REVIEW

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"Eugenics is the science which deals with all influences that improve the inborn qualities of a race; also with those that develop them to the utmost advantage."—Sir Francis Galton, 1904.

NOTES OF THE QUARTER

THE *Eugenics Society* joins with its fellow-subjects throughout the Commonwealth in expressing deep concern and sympathy at the news of His Majesty's illness. It is only in such periods as this, of grave crisis at home and abroad, that the ordinary citizen becomes conscious of how much we owe to the stabilizing influence of our ancient monarchy. The Royal Family, by the example of its domestic and public life, has become the focus of our natural affections and the symbol before all others of the deep unity that transcends all the differences that may seem to outsiders, and sometimes even to ourselves, to divide us. The accent here is on the word "family"; for it is above all as a family that Their Majesties and their children have so richly earned our loyalty and affections. The pleasures and anxieties of their family life are shared by us all; the pleasures as in the marriage of our young Princess and the birth of a Prince to carry on the royal line, and now the anxiety we all feel at the illness that has resulted from the King's unfailing response to the call of duty.

Eugenics can only flourish in a society

with a high sense of the value of the family; one which, in its social and economic setting, and in its conventions and institutions, is so ordered as to facilitate the production of a happy and well-endowed posterity. The provision of economic incentives, the removal of economic deterrents, all help to this end, and they may be right who hold that nothing substantial can be achieved without them; but it is at least equally true that the most generous economic arrangements must fail in their purpose if a happy and responsible family life is not esteemed by the finest elements in our society as an end worth striving after. It is here that the force of the Royal example tells, helping quietly and unostentatiously to foster that subtle nexus of beliefs and conventions we call the eugenic conscience.

This is not the least of the blessings we owe to Their Majesties as heads of our great British family.

* * *

The Russian Academy of Sciences was founded in 1725 under the patronage of Peter the Great. It took as its model the Royal Society of London, whose foundation, about the nucleus of an earlier organization, had been approved by King Charles II in 1660. In 1925, two hundred years after its inception, the Academy was reconstituted by the Soviet Government as the Academy of Sciences of the U.S.S.R.; but in general the new Academy maintained the traditions of its predecessor and held not less a place in the esteem of scientific workers throughout the world. To be elected to its honorary membership came to be regarded by foreign scientists as a high distinction; and we may assume that this was how it appeared to Sir Henry Dale, who was president of the Royal Society from 1940 to 1945, when this honour was conferred upon him in 1942.

It is common knowledge that the next man's judgment, though seldom one's own, is apt to be distorted under the softening influence of a war-time alliance; but when all allowances were made for this amiable weakness, there still remained among those entitled to an opinion a profound conviction that the Academy was concerned, first and last, with the advancement of science and scholarship, and that it had an organization which admirably fitted it for its purpose. We may recall that as recently as 1947 Professor Eric Ashby* gave it as his opinion that nearly all the academicians were first-class workers and that the mere entrepreneur of science was not admitted unless he had other claims to scientific distinction. It is significant, in view of recent developments, that even at this date Professor Ashby could add: "Politics plays a very minor part in the election of academicians. Here and there a man has been elected to the Academy on political rather than intellectual merit, notably the notorious academician Lysenko; but these rare and egregious exceptions do not seriously weaken the imposing intellectual strength of the Academy."

We may well ask, then, why, only a year or so after these words were written, Sir Henry Dale came to the painful decision that he must resign his membership of the Academy and make public his letter of resignation addressed to its president. The matter is of concern to eugenists, for it turns in part—and it must be stressed at once, only in part—on an important genetical controversy; but it involves even more profound moral issues that should be the concern of everybody.

Sir Henry Dale recalls that in the year in which he was elected to the Academy, the Royal Society of London elected the great Soviet geneticist Nicholas Ivanovitch Vavilov to be one of its fifty foreign members. As first director of the Lenin Academy of Genetics, Vavilov was reputed to have done much to further agriculture in the Soviet Union, and the Royal Society had wished to

honour his work as a great contribution to science for the whole world. At this time it had already been reported in Britain that Vavilov had fallen from favour with those who came after Lenin, but the reason was supposed to be political or in some other way irrelevant to his scientific achievement.

In 1945, however, the Royal Society learned for the first time that Vavilov "had been dismissed from his position, had disappeared with a number of his co-workers in genetics, and had died at some unknown date between 1941 and 1943." There now followed a scarcely credible sequence of events. "Repeated inquiries addressed to your Academy by the Royal Society through all available channels asking only the date and the place of his death received no reply of any kind. I understand that the Royal Society has not yet been officially informed whether this distinguished Russian scientist was still alive at the time of his election to its foreign membership."

More recent events, continues Sir Henry, of which full reports have come to hand, have made it clear what has happened. The late N. I. Vavilov has been replaced by T. D. Lysenko, the advocate of a doctrine of evolution which, in effect, denies all the progress made by research in that field since Lamarck's speculations appeared early in the nineteenth century. . . . This is not the result of an honest and open conflict of scientific opinions; Lysenko's own claims and statements make it clear that his dogma has been established and enforced by the Central Committee of the Communist Party as conforming to the political philosophy of Marx and Lenin. Many of us, Mr. President, have been proud to think that there were no political frontiers or national varieties in a science common to all the world; but this is now to be separated from "Soviet science" and repudiated as "bourgeois" and "capitalistic."

Decrees which the presidium of your academy has issued on August 27th of this year give effect only too clearly to this political tyranny. My old and honoured friend, Academician L. Orbeli, distinguished neurophysiologist of the school of your great Pavlov, is dismissed from his secretaryship of your Academy's Department of Biological Sciences because he has failed to anticipate your decrees in their restriction of all research and teaching in genetics in the U.S.S.R. to this politically imposed orthodoxy.

Is it possible for any scientist, whatever his national or political allegiances, to dissent

* *Scientist in Russia*. Pelican Books. Price 1s. 6d. net.

from the following conclusion drawn by Sir Henry Dale from these deeply disturbing events?

Since Galileo was driven by threats to his historic denial there have been many attempts to suppress or to mutilate scientific truth in the interests of some extraneous creed, but none has had a lasting success; Hitler's was the most recent failure. Believing, Mr. President, that you and your colleagues must be acting under a like coercion, I can only offer you my respectful sympathy. For my own part, being free to choose, I believe that I should do disservice even to my scientific colleagues in the U.S.S.R. if I were to retain an association in which I might appear to condone the actions by which your Academy, under whatever compulsion, is now responsible for such a terrible injury to the freedom and the integrity of science.

* * *

This is not the occasion for an assessment of the so-called "new genetics." We agree with Professor Haldane that this can well wait until we have before us a full translation of all the Russian documents. But the issue is not, as he seems to think, limited to the academic question whether the truth lies with Lysenko and his followers or with their opponents. This is indeed a vital question, for if Lysenko's views are accepted we shall have to throw overboard most of the knowledge and experience accumulated by geneticists over the past half-century. But we are now concerned—and a man of Professor Haldane's sensibility must surely realize this—with a far more urgent matter: with the problem of deciding at once and without equivocation where our solemn duty lies, and what faith it is incumbent upon us to proclaim, when some of those engaged in one side of the controversy have been spirited from the face of the earth. It is to this pressing theme that Professor Haldane should, we suggest, turn his attention while the translators are completing their heavy task.

It would be unseemly to touch upon such grave matters without affirming one's prejudices. Our own—if heretics cannot be allowed to propagate their heresies—are all in favour of the stake in the market-place. If we are forced to choose between an

authoritarian society which disposes of its heretics by torture and burning and one which arranges for them to vanish from the world of men, we confess to a preference for the former. For all its sins against the human spirit it is at least open and honest. Its deeds and the fate of its victims are recorded in the pages of history for the enlightenment of all succeeding generations. But in the tragic story of Vavilov and his colleagues, what gives the final intolerable turn to the screw is that we do not know what they endured in their last days, and apparently shall never be allowed to know. A page of history is blotted out and the record of their lives ends on a question-mark.*

* * *

There remain a few questions of detail that we venture to address to Professor Haldane, secure in the knowledge that he is not likely, if he does us the honour of replying, to prove unduly hostile to the Soviet cause.

First, we should like him to consider a very remote hypothesis—the supposition that the events we have been considering had happened the other way about. If persistent inquiries by the Academy of Sciences of the U.S.S.R. about the fate of an honoured English colleague had been ignored by the Royal Society of London over a period of years, would its Fellows have remained silent and unprotesting? Would none of them—possibly Professor Haldane himself—have risen to point a contrast between the sympathetic concern of the Soviet Academy and the callous indifference of its bourgeois-imperialist counterpart? Can Professor Haldane conceive of the Royal Society's instituting an inquisition such as is now proceeding in Russia, one that has resulted in the humiliation and dismissal from their high office of many of the finest workers in the whole world of science?

Some categorical statements made recently by Professor Ashby, in a talk broadcast in the Third Programme,† suggest a few further

* As we go to press we have been reminded that the facts of this sad story were first made known to the public by Dr. J. R. Baker, a Fellow of the *Eugenics Society*.

† *The Listener*, November 4th, 1948, p. 677.

questions. Professor Ashby cannot be charged, as can perhaps some who have engaged in the Lysenko controversy, with Russophobia. In his *Scientist in Russia** he not only refers with unstinted respect to notable contributions made by Soviet scientists in the field of genetics but, going even further, asserts that "in some branches of the subject Russia has set the pace for world research."

Perhaps Professor Haldane would tell us what he thinks of Ashby's statement that Lysenko "set out to demolish the whole structure of modern genetics by a few trifling experiments on grafts which would not be accepted as a student's exercise in a British university." Is it true, as Ashby also asserts, that "the men who disbelieved Lysenko have now obsequiously apologized and promised to propagate his ideas; men who had brought Russia great distinction in biology—Dubinin, Schmalhausen, Zhebrak, and Navashin—have either lost their jobs or have written cringing confessions"? Is it also true that "one man alone is reported to have defied the authorities: Nemchinov, a statistician, the gentle myopic Director of the Timiryazev Agricultural Academy"; and that "he has been 'removed' "?

A few weeks ago Mr. A. J. Cummings, of the *News Chronicle*, invited Professor Haldane to state his views on the "new genetics" and their political background and consequences. Professor Haldane replied in the *Daily Worker* with an article that was brilliant debating, and thus excellent entertainment. He agreed with Lysenko in this, he disagreed in that: how intellectually refreshing it must have seemed to his readers, what incontrovertible proof of the complete freedom of discussion within the Communist Party! As for Vavilov, Professor Haldane did not commit the indelicacy of dragging his name in, and for the *Daily Worker* we may safely assume that out of sight was out of mind. Indeed, only one criticism could be levelled against his reply—that it did not at any point come to grips with Mr. Cummings's

questions. May we, in offering him the hospitality of these columns, venture the hope that our questions will be treated in a different spirit? It is impossible for Professor Haldane to be otherwise than brilliant; but is there anyone who knows better than he does that brilliant debating points are seldom a conspicuous feature on the road to truth?

* * *

A recent decision in the Divorce Court suggests an important rider to Mr. Binney's illuminating exposition (p. 199) of the legal problems involved in artificial insemination.

Up to now it has generally been held—not only by the uninstructed public, but even by lawyers—that such problems were likely to be serious only when fertilization was secured by donated sperms (A.I.D.), not in cases of so-called "assisted insemination" (A.I.H.) in which the sperms used were those of the husband. Even the Archbishop of Canterbury's Commission,* which recommended that A.I.D. should be made a criminal offence, took a kindly view of A.I.H. This expedient, it argued, unlike A.I.D., which violated the exclusive union set up between husband and wife, could be regarded as a morally justifiable means of fulfilling "a primary purpose of marriage," the procreation of children; and we may assume that in arriving at this opinion it took full account of the fact that marriages which needed A.I.H. to make them fertile were often those in which the husband was unable to engage in normal sexual intercourse—and thus marriages which might become the subject of nullity proceedings. That the Commission nevertheless came out in favour of A.I.H. is much to its credit; but it does suggest that neither its members nor the eminent lawyers who advised it foresaw the possibility—which by the decision referred to has now been realized—that the effect of such a decision might be to illegitimize the off-spring.

The facts may be recalled very briefly. On November 30th Mr. Justice Pearce granted a degree of nullity to a petitioner on the grounds of her husband's impotence. For

* See footnote, p. 176.

* See EUGENICS REVIEW, October 1948, p. 119.

the husband it was admitted that the marriage had not been normally consummated ; but it was argued that the wife had nevertheless " approbated " the marriage by willingly submitting to impregnation with his semen, and thereby conceiving a child of which he was the father. It was further argued that to grant the decree would be to render the child illegitimate, and thus an act against the public interest.

For reasons irrelevant to our present theme his Lordship did not accept these pleas. He agreed that to illegitimize the child was most regrettable, but added that " the sons were not now judged by the errors of their parents." It may well be asked if judicial innocence could possibly go further ! Nothing is more certain than that illegitimacy is still a stigma and still carries serious disadvantages. The illegitimate child, with very rare exceptions, is handicapped psychologically and socially. The disadvantages begin in the nursery, continue throughout school life, and often restrict the choice of an occupation and the chances of pursuing it successfully. The penalties have unquestionably been softened with the development of a more humane and tolerant public opinion ; but we fear it will be many years before his Lordship's statement even roughly accords with the facts.

To question a judge's *obiter dicta*, however, is not to impugn his interpretation of the law. As this now stands the alternatives before him were to deny the wife's suit, and thus it would seem to do an injustice to her, or by granting it to impose the handicap of illegitimacy on her child. A law which poses such a dilemma may have satisfied public opinion in the past ; it falls lamentably short of the moral standards of our own time.

It is perhaps too early yet to expect Parliament to take account of the many new problems that are bound to arise with increasing resort to artificial insemination. But could not the present problem be disposed of at once by a simple amending law—by no more than a clause to the effect that a decree of nullity shall not involve any change in the status of offspring of the marriage conceived or born in wedlock ?

* * *

The Scottish Council for Research in Education has lately completed a survey of the intelligence of all the accessible eleven-year-old children attending State and private schools in Scotland. The children tested numbered 70,805 in an estimated year-group of 80,300, most of the missing children being absentees on the day of the test. A similar test had been applied to the same age-group in 1932, when the number of children tested was 87,498 out of an estimated total of 100,300, and the missing children were again mainly absentees ; and it was hoped that a comparison of results would yield information about the trend of intelligence and the precise nature of the relation between intelligence and family size.

The problems behind this important investigation have been repeatedly discussed in these columns since Professor Godfrey Thomson, in his Galton Lecture for 1946,* first made a reasoned plea for such a direct comparison between the generations.

My general conviction, he said, is that there is a negative correlation between the " intelligence " of a child of about eleven years, and the size of the family of which he or she is a member, and I am fairly sure that the correlation coefficient is approximately -0.25 . Of its cause I am much less certain, but I think it is largely due to the later marriages of intelligent people, their restraint in producing fewer children, and the inheritance of their intelligence by their offspring.

Caution is necessary because it is very difficult to disentangle, in the estimate of a child's " intelligence," that part which is his inborn potential intelligence and that due to his education, his home, his environmental chances. I do not myself think that environment and social inheritance explain more than a fraction, at most, half, of the negative correlation actually observed.†

And he continued :

It is comparatively easy to obtain support for the kind of reform needed to equalize the cultural and educational handicaps of large versus small families. Some of these reforms might also assist in equalizing the differential birth-rate, though others, however desirable for other reasons, might accentuate it. It is more difficult to obtain support for reforms

* *The Trend of National Intelligence*. " Occasional Papers on Eugenics," published jointly by the *Eugenics Society* and Hamish Hamilton Ltd., price 2s. net.

† *Loc. cit.*, p. 4.

tending to eugenic progress, partly because the man in the street thinks them impracticable, but largely because he does not believe in the alleged decline in intelligence. He is very sceptical about conclusions concerning the difference of intelligence between two generations when these conclusions are based entirely on measurements made on only one generation. He demands a straightforward measurement of two succeeding generations, and I sympathise. Actual measurement of two successive generations is desirable, indeed essential, and I would urge all who are in a position to facilitate such an experiment, or to contribute towards carrying it out, to do so.*

With scientific workers on all sides complaining that it is becoming increasingly difficult to get money for long-term projects, it is pleasing to record that in this instance finance was not allowed to stand in the way. The *Eugenics Society*, which through its representation on the Population Investigation Committee was largely responsible for the idea of the investigation, contributed £2,000 to its cost; and with this and a generous grant from the Nuffield Foundation, the Scottish Council was able to go ahead.

We learn from Professor Thomson's brief interim report† on the findings that far more information was obtained about the subjects of the 1947 investigation than was available about the earlier group.

On this occasion the teachers recorded the size of the school, whether the area was urban or rural, the child's class in school, the place of his or her birth, the position in the family and its size (e.g. third in a family of six), regularity of attendance, number of changes of school, and particulars of any previous tests. Twins were also noted.

Still more information was obtained by a visit by district nurses to the homes of those born on the first three days of each month of 1936, forming a random sample of the whole—the "thirty-six-day sample." For these the record shows whether the child had been evacuated, and for how long; the occupation of the father, and the date of the mother's birth; particulars about the home and the number of occupants; height, weight and health of the child, etc. Those born on the first day of alternate months of the year (February 1st, April 1st, and so on) were given an individual Binet Test.

Such extensive data will obviously form the subject of analysis and calculation for

several years to come, but even the preliminary assessment of the facts has pointed to some highly significant conclusions.

The phenomenon of a decreasing average score in the test with an increasing size of the family is fully confirmed beyond all possible doubt. Out of a possible 76 points obtainable on the test, the 7,824 only children averaged 42.0 points, and 15,971 children of families of two averaged nearly as much. But thereafter the average score dropped, rapidly at first, then more slowly. For families of four, the average score was 35.3, for those of eight the average score was 28.8, and the drop continued. There were families of every size up to 19, the representatives of families of 18 and 19 scoring 7 and zero, respectively.

Although, however, the negative association of family size with intelligence test score was as marked as ever, the mean score of all the children was higher than that of the group tested in 1932. The actual figures were 36.7 for the recent and 34.5 for the earlier group—findings which at first sight hardly seem to support the view that the fifteen years between 1932 and 1947 had seen a decline in the average level of intelligence. Nor, however, though this will prove a little harder for the general public to grasp, do they indicate that intelligence in that period has actually increased. Professor Thomson discusses several possible explanations of the facts. The average level may be higher because the children of 1947 were more familiar with the tests than their predecessors in 1932. "Such a 'false' rise would of course bring us no consolation. It might only hide a fall due to selection, which might win in the long run." Or the explanation might lie in improvements of the environment and nurture, or in better teaching, any or all of which could easily mask the effects of any adverse genetical changes that may have occurred. Or, though this is less an explanation than an exercise in wishful thinking, the heredity of Scottish children may have improved in the past fifteen years.

It is our hope, says Professor Thomson, that the separate analysis of results from different districts, from city and country, from reception and evacuation areas, from counties more or less accustomed to tests, may help to clear up the paradox.

If, as is possible, the explanation is that all is

* *Loc. cit.*, p. 14.

† *The Times*, November 17th, 1948.

due to environmental causes and nothing to heredity—the rise in average score being due to general social improvements, the persisting low scores of large families being due nevertheless to their comparative handicaps—then the phenomena are still of great importance, and the negative correlation of family size and “intelligence” may be ironed out in time. If, however, selection is going on, we must beware of being lulled into a sense of security by an improvement which may be only apparent.

There for the moment we may leave it. The investigation confirms, beyond all possible doubt, that intelligence and small families go together; but it does not yet answer the question whether the children are more intelligent because they have fewer brothers and sisters or more intelligent parents. Other surveys, however, have established a positive correlation between parental intelligence and that of the children, the findings of scientific investigations confirming, in this case, the verdict of common sense. It amounts indeed to an indictment of our civilization, in particular of its attitude to the family, that the most highly endowed stocks, irrespective of their social or economic class, are in general those that produce the smallest families. And this fact once granted the disagreeable possibility presents itself that the small rise in the general level of intelligence observed in the 1947 investigation was, to use Professor Thomson's term, a “false” rise concealing a real fall in innate ability. We have seen a rise in physical standards—e.g. in working-class stature and weight, attributed by all authorities to better nutrition and the wide extension of services for maternal and child welfare; and the apparent improvement in mental abilities may have a like explanation.

Whatever the outcome of the more elaborate analyses to which the Scottish Council's data are now being subjected, we may express the hope that the investigation will be repeated on the next generation of Scottish eleven-year-olds; and that similar projects will be undertaken by other educational authorities. For the problems cannot wait. The trend of our national intelligence is a matter about which we cannot afford to remain in doubt—any more than we can afford to be without a complete scientific

assessment of our differential fertility and its consequences; and investigations should continue until the facts have been established beyond all controversy.

* * *

A few months ago a young ex-Guardsman was charged with the murder of a three-year-old girl in the grounds of a provincial hospital. The child's battered body was found some two hours after she had been missed from her cot; and the accused, in a statement to the police, admitted to having entered the ward, removed the child and taken her outside. There, one learns, the child “would not stop crying,” and in the accused man's own words, “I just lost my temper then and banged her head against the wall.” The next day he read about the murder in his newspaper, but was not shaken, and indeed behaved normally until he was arrested. He was found guilty, and the judge, in passing sentence of death, said: “The jury have found you guilty of a crime of most brutal ferocity, and I entirely agree with their verdict.” So apparently did the Home Secretary, who, after a careful review of the case, could find no reason for the exercise of the Royal Prerogative, and in due course the man was hanged.

From the nature of the crime it is reasonable to suppose that the murderer was insane; and medical evidence to the effect that he was a schizophrenic was in fact given in the course of the trial. The judge, however, while conceding that there was abundant evidence that the crime was that of a lunatic, applied the M'Naghten rules, and instructed the jury that for them the vital point to consider was whether the person who did the act knew that what he was doing was wrong.

It would be hard to-day to find an expert, medical or legal, who would not agree that the M'Naghten rules are based on a profound misconception of the nature of criminal responsibility and should be either modified or completely superseded; but our present purpose is not to discuss anachronisms in the criminal law but to draw attention to one curious aspect of the case whose social implications seem to have escaped general notice. According to the accused

man's mother—and her evidence was not called into question—when she married in 1923 she did not know that five years previously her husband had been confined for nine months in a mental hospital suffering from paranoid schizophrenia. After that her further statement that at the age of six the accused had fallen on his head from a milk float fades into insignificance. We are not informed whether, had she known her suitor's unfortunate history, she would still have married him; the essential fact is that knowledge which could, and conceivably might, have influenced her decision was withheld until too late.

It has been argued that such genetical disasters would occur less often if pre-marital health examinations became the accepted social practice. But such results, we suggest, would be most likely to ensue if the examinations were entered upon voluntarily and with a full understanding of their significance, and if it were then left to the discretion and good sense of the couples concerned whether or not they informed each other about the results. Compulsory measures must always be looked upon as a last resort, not only on the sound general principle that the less power governments have over the private lives of the governed the better, but because, in matters like this, compulsion has been proved, whenever it has been applied, to defeat its own ends. As pointed out by Dr. C. P. Blacker* in his analysis of the laws governing pre-marital examinations in Turkey, Nazi Germany, Norway and elsewhere, "if the examinations are compulsory, it can be taken as certain that there will be many refractory candidates who will be anxious to conceal particulars about their ancestors or past lives." People lacking in a responsible attitude to the future are hardly likely to wreck their chances of marriage by undue candour about skeletons in their family cupboards. In Germany it was not only the general public who falsified the records; many doctors, too, when their findings were such as might have led to the compulsory sterilization of their

patients, became expert in devising euphemistic terms for grave mental disorders and in finding other loopholes in a law which outraged their moral sentiments. In short, compulsion is not merely an evil in itself, it is not even a necessary evil that we need tolerate on the specious pretext that the alternative would be worse.

The *Eugenics Society* formed these conclusions when it prepared its "Pre-Marital Health Schedule"; and all its experience since has gone to confirm them. According to reports from practitioners who have used the schedule, the couples who voluntarily seek a genetical prognosis are usually highly endowed and sometimes scrupulous to a fault. The many couples who have consulted Dr. Blacker at the headquarters of the *Society* include a high proportion who have overrated the significance of apparently dysgenic elements in their family histories, and have needed rather to be assured of their fitness for parenthood than deterred from it. Unfortunately, it is not people like the father of the ex-Guardsman who seek a pre-marital examination.

We have here an obvious dilemma. If it is conceded that compulsory measures must fail and that measures which depend on the voluntary co-operation of couples contemplating marriage tend to affect those more rather than less highly endowed, what other course is there still before us? To this question there can be only one answer. A eugenic sense of values must become so widespread through all classes of society that ultimately it will be regarded as in the highest degree reprehensible for anyone to enter upon marriage and parenthood without first seeking authoritative assurance as to his fitness for them. Such eugenic education cannot start too early. If it were inculcated in the schools, as it so easily could be in periods devoted to biological, moral and religious instruction; if the same lessons were repeated on an appropriate level in institutions of higher education, at youth clubs and in the churches; if the B.B.C. and the Press exercised their influence to the same end; if, in a word, full use were made of all the instruments of education and

* "Laws on Health and Marriage," *EUGENICS REVIEW*, 1935, 27, 191.

propaganda available in our complex society, the approach to marriage on the part of the great mass of people could be changed irreducibly for the better within the span of a single generation. It would become impossible, or at least excessively rare, for couples to marry without knowing the essential facts about each other's physical and mental health and that of their families. It would become as unusual in great cities as it still is in many rural areas, where families have been long settled and lived in neigh-

bourly intimacy for many generations, for marriages to occur between couples who have never inquired into or met each other's families. The eugenic objective would be achieved when it became one of the assumptions of our society, so deeply rooted that no one would think of questioning it, that marriage involves a union not merely of individuals but of families; and one not merely "ordained for mutual society, help and comfort," but also for the procreation of a healthy posterity.

POPULATION STUDIES

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